

## **Marked up version of all amended claims**

1. Method and apparatus of a position encoder system for a computer, comprising:

- a housing movable in 2 directions relative to a reference base;
- encoding means for sensing movements of said housing relative to the reference base thereby providing indicative signals to a host computer directional and positional information of said housing;
- communication means for transferring signals from said encoding means to a host computer;
- modification means for changing the function the host computer performs [base] based on the movements of said housing, including but not limited to changing the host computer to do nothing [base] based on the movements of said housing.

2. The system in claim 1 wherein said modification means being triggered will deactivate said encoding means preventing movements of said housing along said 2 directions to be sensed thereby said housing moves freely along said 2 directions without providing to a host computer indicative signals of directional and positional information of said housing[;].

3. The system in claim 1 wherein said modification means being triggered will generate a further signal indicating to a host computer to interpret the movements of said housing differently, thereby the host computer performs different functions [base] based on the movements of said housing.

4. The system in claim 1 further comprising:

- said housing further including a plurality of keys being pressed thereby generating character signals to a host computer, said housing being moved by touching and/or pressing said plurality of keys with the fingers of an operator and applying a lateral force;
- sensing means detecting if said plurality of keys on said housing being touching by the fingers of an operator thereby providing indicative signals to a host computer tactile information of said plurality of keys;

- said plurality of keys on said housing being touched and/or pressed together with said housing being moved or let motionless, providing indicative signals to a host computer tactile information of said plurality of keys and positional and directional information of said housing, thereby directing a host computer to perform predetermined functions [base] based on combinations of said plurality of keys being touched and/or pressed together with said housing being moving or not, allowing an operator to quickly direct a host computer to perform predetermined function by changing hand gestures of touching and/or pressing said plurality of keys and with or without applying a lateral force to move said housing;
- said combinations of said plurality of keys being touched and/or pressed together with said housing being moving or not, including but not limited to none of said first and second plurality of keys are pressed nor touched;
- said combinations of said plurality of keys being touched and/or pressed together with said housing being moving or not, being configurable by an operator through software or hardware means, thereby an operator being able to define combinations of said plurality of keys being touched and/or pressed together with said housing being moving or not, to indicate to a host computer to perform different operations;
- said predetermined functions performed by a host computer being configurable by an operator through software or hardware means;
- said predetermined functions performed by a host computer including but not limited to deactivating said encoding means thereby said [housings] housing being moved but not directing a host computer to perform any function;
- said modification means being defined as some of said combinations of said plurality of keys being touched and/or pressed together with said housing being moving or not.

5. The system in claim 4 further comprising:

- said housing being a footprint adapted by a hand of an operator having one side with a first elongated indented area;
- a base being a keyboard case and a platform surface with a second elongated indented area;
- said communication means including a [first] communication member having one end received into said [first] housing through said first indented area and another end received into said [supporting] base through said second indented area thereby said first

- indented area facing said second indented area forming a cavity allowing said [first] communication member to move thereon when said [first] housing moves over said platform surface;
- a link member being a tubular structure having a first end extended into said first indented area on said housing thereby said first end movable in a first direction along the length of said first indented area, said tubular structure having a second end extended into said second indented area on said platform surface thereby said second end movable in a second direction along the length of said second indented area, thereby said housing movable in said first and second directions coplanar to said platform surface, said first and second directions being orthogonal, said tubular structure being hollow thereby said communication means passing through therein from said housing into said base.

6. The system in claim 5 further comprising:

- said keyboard case having a row of keys near the top edge representing the Esc, F1 to F12, Print Screen, Scroll Lock and Pause keys, said keyboard case having on the right side a numeric key pad representing the numeric key pad keys in a standard personal computer keyboard;
- said platform surface being disposed sidewise below said row of keys;
- said plurality of keys on said housing including all the keys in a standard QWERTY keyboard[;].

7. The system in claim 5 further comprising:

- said keyboard case having a row of keys near the top edge representing the Esc key, F1 to F12 keys, Print Screen key, Scroll Lock key and Pause key, said keyboard [unit] case having on the left side all the keys representing the keys in a standard QWERTY keyboard, said keyboard [unit] case having on the right side a numeric key pad representing the numeric key pad keys in a standard personal computer keyboard;
- said platform surface being disposed sidewise between the QWERTY keys and numeric key pad;
- said plurality of keys on said housing including the Up Arrow, Down Arrow, Left Arrow, Right Arrow keys, Insert, Delete, Home, End, Page Up, Page Down keys, and 3

keys representing the mouse buttons 1, 2 and 3 in a conventional 3-button computer mouse.

8. The system in claim 5 further comprising:

- said keyboard [unit] case having a row of keys near the top edge representing the Esc key, F1 to F12 keys, Print Screen key, Scroll Lock key and Pause key, said keyboard [unit] case having all the keys representing the keys in a standard QWERTY keyboard, said keyboard [unit] case having the cursor movement keys including the Up Arrow, Down Arrow, Left Arrow, Right Arrow keys, Insert, Delete, Home, End, Page Up, Page Down keys, said keyboard [unit] case having a numeric key pad on the right side representing the numeric key pad keys in a standard personal computer keyboard, said cursor movement keys being disposed between the QWERTY keys and the numeric key pad;
- said platform surface being disposed sidewise between the QWERTY keys and numeric key pad;
- said plurality of keys on said housing including 3 keys representing the mouse buttons 1, 2 and 3 in a conventional 3-button computer mouse, said housing being located sidewise below said cursor movement keys.

12. Method and apparatus of a position encoder system for a computer, comprising:

- a first member movably in a first direction relative to a reference base;
- a second member movably in a second direction relative a reference base, said second member movable in said first direction causing said first member moving in said first direction relative to a reference base;
- encoding means for sensing movements of said first member relative to the reference base, and movements of said second member relative to the reference base, thereby providing indicative signals to a host computer positional and directional information of said first and second members;
- communication means for transferring signals from said encoding means to a host computer;
- modification means for changing the functions the host computer performs [base] based on the movements of said first and second members, including but not limit to changing



the host computer to do nothing [base] based on the movements of said first and second members;

- said first and second directions together covering a region in the Cartesian plane.

15. The system in claim 14 wherein said second member includes a first button liftable upwardly being sensed by a sensor thereby triggering said modification means changing the functions performed by a host computer [base] based on the movements of said first and second members, said button being pressed serving as the same function as pressing the button 1 of a conventional computer mouse, said first button being able to rotate clockwise and anti-clockwise serving as the same function as rotating the scroll button in a conventional computer scroll mouse.

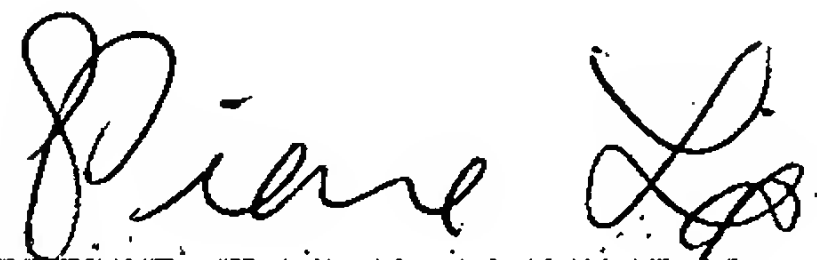
26. Method and apparatus of a position encoder, comprising:

- a first housing having a first plurality of keys movable in 2 directions over a reference base;
- a second housing having a second plurality of keys movable in 2 directions over a reference base;
- a first encoder means for sensing movement of said first housing thereby providing indicative information to a host computer of directional and positional information of said first housing;
- a second encoder means for sensing movement of said second housing thereby providing indicative information to a host computer of directional and positional information of said second housing;
- communication means for transferring signals from said first and second encoding means to the host computer;
- modification means for changing the function the host computer performs [base] based on the movements of said first and second housings, said functions performed by the host computer including but not limited to do nothing [base] based on the movement of said first and second housings.

35. The system in claim 32 wherein said base being a notebook computer having a chassis for supporting said first and second housings, said platform surface being indented at a depth of about the height of said first and second housings, said platform surface being open at the left and

right sides thereby said first housing movable laterally beyond the left boundary of said platform surface and said second housing movable laterally beyond the right boundary of said platform surface, said notebook computer having a cover pivotally mounted at said chassis, said cover having a left and right edges with sloped protrusions, said first [hosing] housing having left boundary with a sloped edge and said second housing having right boundary with a sloped edge, whereas said cover folding downward to said chassis causing said first and second housings moving laterally to the centre of said platform surface by mechanical or electronic means, said cover folding further downward causing said left sloped protrusion touching said left sloped edge and said right sloped protrusion touching said right sloped edge, thereby forcing said first and second housings to glide in place when said cover completely collapsed.

Yours truly,

A handwritten signature in cursive script, appearing to read "Pierre La", written over a horizontal line.

Lip, Chung Ching